

Notice of Allowability

Application N .

10/092,455

Examiner

Tuan N Nguyen

Applicant(s)

DIJAILI ET AL.

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/12/2004.
2. ☒ The allowed claim(s) is/are 1-13 and 18-40.
3. ☒ The drawings filed on 06 March 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Don Wong
Supervisory Patent Examiner
Technology Center 2800

DETAIL ACTION

Response to Amendment

1. In respond to applicant's amendment filed 03/12/2004, claims 1, 2-13, 18, 19, 22-24, 26-32, and 34-36 have been amended, claims 14-17 have been canceled, and claims 37-40 have been added.

REASON FOR ALLOWANCE

Allowable Subject Matter

2) The following is an examiner's statement of reasons for allowance - Applicant's response filed on 03/12/2004 has been considered, with respect to claims 1, 18, 24, and 37, the references of the record fail to teach or suggest:

1. (Currently Amended) ~~A lasing semiconductor optical amplifier (SOA)~~ An apparatus for amplifying an optical signal, comprising:

a vertical cavity lasing SOA for amplifying an optical signal traveling through an active region of the lasing SOA and outputting an amplified optical signal, wherein a ballast laser signal produced by the vertical cavity lasing SOA that acts as a ballast with respect to the amplification of the optical signal;

a detector coupled to a surface of the lasing SOA that emits the ballast laser signal ~~positioned proximate the lasing SOA~~ to convert the ballast laser signal to an electrical signal; and

a power monitor; coupled to the detector, for analyzing the electrical signal and determining to determine a power level of the ballast laser signal ~~optical signal~~, wherein a pumping current of the vertical cavity lasing SOA is adjusted based on the power level of the ballast laser signal to amplify the optical signal.

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18. (Currently Amended) A vertical cavity lasing SOA output power detection and control system comprising:

a plurality of vertical cavity lasing SOAs for amplifying at least one optical signal, each vertical cavity lasing SOA and ~~further for outputting a ballast laser signal~~ which acts as a ballast with respect to the amplification of the at least one optical signal in each lasing SOA;

at least one detector coupled with each lasing SOA, ~~positioned proximate to at least one lasing SOA within the plurality of lasing SOAs, to~~ each detector converting a particular ~~convert~~ ballast laser signal ~~from the at least one lasing SOA~~ to an electrical signal; and

a power monitor~~[[.]]~~ coupled to the at least one detector, wherein the power monitor analyzes each electrical signal from each detector to determine ~~for analyzing the electrical signal and determining a power level of~~ each ballast laser signal, wherein a pump current of each lasing SOA is adjusted based on the power level of each corresponding ballast laser signal such that an output signal of each vertical cavity lasing SOA is amplified without saturating the vertical cavity lasing SOA, the at least one optical signal.

24. (Currently Amended) A method for controlling an output power of an optical signal amplified in on a lasing SOA, the method comprising the steps of:

amplifying an optical signal as the optical signal travels through an active region of a lasing SOA:

outputting a ballast laser signal from the lasing SOA, wherein the ballast laser signal acts as a ballast with respect to amplification of the optical signal;

detecting the ballast laser signal with a detector coupled to the lasing SOA; and

monitoring the ~~a~~ power of the ~~amplified optical signal by the detected ballast laser~~ signal; and

adjusting a pumping current of the lasing SOA to control amplification of the output optical signal and to prevent the lasing SOA from saturati n based on the power of the detected ballast laser signal.

37. (New) A lasing semiconductor optical amplifier (SOA) comprising:
- a first lasing SOA that outputs a ballast laser signal that acts as a ballast to an optical signal being amplified by the first lasing SOA;
 - a detector coupled to the first lasing SOA, wherein the detector detects the ballast laser signal and converts the laser ballast signal to an electrical signal;
 - a power monitor that analyzes the electrical signal to determine whether the first lasing SOA is saturated or is approaching saturation; and
 - a pump source that adjusts an output power of a second lasing SOA in response to a signal from the power monitor, the second lasing SOA further amplifying the optical signal.

3) Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

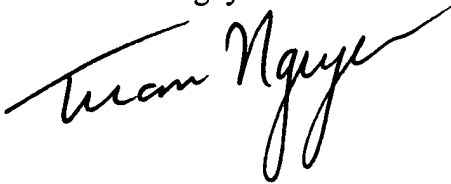
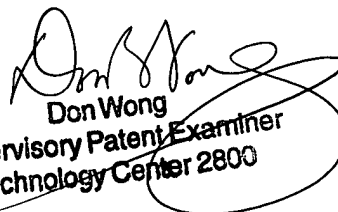
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read "Tuan Nguyen", with a long, sweeping horizontal line extending from the end of the signature.A handwritten signature in black ink, appearing to read "Don Wong", with a large, circular flourish at the end.

Don Wong
Supervisory Patent Examiner
Technology Center 2800